REMARKS

The Office Action dated January 5, 2011 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto.

By this Response, claims 1-16 are currently pending in the application, of which claims 1, 13, and 16 are independent claims.

In the Office Action, claims 1, 4, 10, 11, 13, 15, and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Thompson, et al., U.S. Pat. Pub. No. 2002/0073086 ("Thompson") in view of Korus, et al., U.S. Pat. No. 7,075,929 ("Korus"), and further in view of Ginzboorg, et al., U.S. Pat. Pub. No. 2002/0169712 ("Ginzboorg"). Applicants respectfully traverse this rejection.

Independent claim 1, upon which claims 2-12 depend, is directed to a method including transmitting multicast data packets in at least one first multicast tree from one transmitter through a plurality of multicast controllers to a plurality of recipients. The multicast connection from a multicast controller to a recipient is unidirectional. The method also includes generating at least one second multicast tree for control messages in an internet protocol network from a network multicast controller to at least one multicast controller at cell level. The method further includes transmitting the control messages from the network multicast controller along the at least one second multicast tree to the at least one multicast controller at cell level. The control messages include information on the multicast transmission of the internet protocol network and a command configured to

connect to the at least one first multicast tree of the internet protocol network configured for multicasts.

Independent claim 13, upon which claims 14-15 depend, is directed to an arrangement for implementing multicasting in internet protocol networks, including a plurality of routers configured to transmit different components in the internet protocol networks to each other. The arrangement also includes at least one first multicast tree configured to transmit multicast packets through a plurality of multicast controllers to a plurality of recipients. The multicast connection from a multicast controller to a recipient is unidirectional. The arrangement further includes a plurality of cell-level multicast controllers configured to transmit packets to the plurality of receivers. The arrangement additionally includes a network multicast controller that is arranged to control the cell-level multicast controllers. An internet protocol network includes at least one second multicast tree configured to route control messages from the network multicast controller to the plurality of cell-level multicast controllers. The network multicast controller is configured to transmit the control messages along the at least one second multicast tree to the plurality of cell-level multicast controllers. The control messages include information on the multicast transmission of the internet protocol network and a command configured to connect to the at least one first multicast tree of the internet protocol network configured for multicast transmissions.

Independent claim 16 is directed to an arrangement including first transmission means for transmitting different components in internet protocol networks to each other.

The arrangement also includes second transmission means for transmitting multicast packets through a plurality of multicast controllers to a plurality of recipients. The arrangement further includes third transmission means for transmitting packets to the plurality of receivers. The multicast connection from a multicast controller to a recipient is unidirectional. The arrangement additionally includes control means for controlling the cell-level multicast controllers. An internet protocol network includes fourth transmission means for routing control messages transmitted from the control means to the third transmission means. The control means is for transmitting the control messages along the fourth transmission means to the second transmission means. The control messages include information on the multicast transmission of the internet protocol network and a command configured to connect to the second transmission means of the internet protocol network configured for multicast transmissions.

Applicants respectfully submit that the combination of Thompson, Korus, and Ginzboorg fails to disclose or suggest all of the features of any of the presently pending claims.

Thompson describes in Figs. 10a to 10d a content distribution network (C.S.2) and a multicast arrangement for queries (B.C) assuming that a reverse-path transmission is supported everywhere in the network. Thus, Thompson does not teach or suggest the first multicast tree and the second multicast tree, where "the multicast connection from a multicast controller to a recipient is unidirectional," as recited in independent claims 1, 13, and 16. Applicants respectfully note that Thompson requires, in particular, as

illustrated and described in the examples of Figs 10a to 10d, a reverse-path transmission to end devices. This is particularly stated in connection with Figure 10b where the responses sent by the end devices are used to create a multicast arrangement for queries (B.C).

In Thompson, all communication is directly with the end devices, i.e., the recipients of the content distribution transmission. Thompson describes transmitting program data using the content distribution network from a content source, where the network transmits data. Thompson further describes transmitting instructions to join a new query distribution group. These instructions are transmitted to the recipients of the content distribution transmission using the content distribution network (C.S.2) as illustrated in Fig 10a. Upon receiving instructions the recipients send join messages to B.C (Fig 10b) constructing a tree. Thus, Thompson clearly lacks a multicast tree reserved for control messages. Specifically, Thompson fails to teach or suggest, at least, "transmitting the control messages from the network multicast controller along the at least one second multicast tree reserved for control messages to the at least one multicast controller at cell level, the control messages comprising information on the multicast transmission of the internet protocol network and a command configured to connect to the at least one first multicast tree of the internet protocol network configured for multicasts," as recited in independent claim 1 and similarly recited in independent claims 13 and 16.

Furthermore, Korus fails to cure the deficiencies of Thompson. Similar to Thompson, Korus assumes reverse-path transmission. Korus describes a system where multicast calls are routed to recipients. The base sites 101-112 communicate with communication units which may be arranged into talk groups using multiple RF channel pairs (paragraph [0014]). Thus, Korus discloses bidirectional transmissions between users, which is in direct contrast with the independent claims of the application where the connection from multicast controllers to a plurality of recipients is unidirectional.

Ginzboorg fails to cure the deficiencies of Thompson and Korus. Ginzboorg describes a system and method to maintain at least one control parameter which is dependent on the service prices that have been effective at least during the current service session and which also describes the way in which the customer has made payments up to the current time. The value of the control parameter is calculated and compared to at least one threshold to determine if the service can be allowed to continue or if some other measures should be taken, for example if the customer should be notified of the current situation. The value of the threshold can depend on a number of variables, for example on the behavior of the customer during the current session (i.e. on one or more control parameters) and/or during one or more of previous sessions. However, there is no teaching or suggestion in Ginzboorg of "transmitting the control messages from the network multicast controller along the at least one second multicast tree reserved for control messages to the at least one multicast controller at cell level, the control messages comprising information on the multicast transmission of the internet protocol network

and a command configured to connect to the at least one first multicast tree of the internet

protocol network configured for multicasts," as recited in independent claim 1 and

similarly recited in independent claims 13 and 16.

Thus, independent claim 1 recites a multicast tree from a transmitter to multicast

controller and further to a plurality of recipients, where the part of the multicast

connection from a multicast controller to a recipient is unidirectional. Further,

independent claim 1 recites a second multicast tree from a network controller to multi

cast controller. This tree is reserved for control messages. This means that no other type

of messages are transmitted using the tree. It is to be noted that the second tree ends at the

multi cast controller.

Thompson lacks a multicast tree reserved for control messages. The Office Action

states that the tree in Fig. 10(a) of Thompson is considered to correspond to the second

multicast tree of claim 1. However, Thompson describes transmitting data from content

source C.S.1 using the tree of 10a. Thus, it is not a tree reserved for control messages. In

addition, the Office Action explaining that the tree in FIG. 10(c) of Thompson is

considered to correspond to the first multicast tree of claim 1. In Thompson, both trees

terminate at the same point, at the receivers of the multicast transmission. This is

mandatory in Thompson as in this reference the receivers must reply to a query to join a

tree. Such is not the case in the present application. In the claims of the present

application, the tree reserved for control messages ends at the multicast controllers, not at

the receivers receiving the actual multicast data packets. Independent claim 1 recites, in

part, "transmitting the control messages from the network multicast controller along the at least on second multicast tree reserved fro control messages to the at least one multicast controller at cell level…" The multicast controllers receive control messages and are able to connect to the first multicast tree on the basis of control information. As the tree reserved for control messages does not even reach the receivers they are unable to respond to any control commands. This makes the comments presented in the 'Response to Arguments' section of the Office Action (lines 5 to 7) moot.

It is stated in the Office Action that Korus discloses edge devices at cell level and refers to base stations 101–112 of Figure 1. However, Korus does not disclose to separate multicast trees, one for data and one reserved for control messages. Korus discloses only one multicast tree. When a communication unit receiving a multicast transmission moves to the area on another base station, the base station is instructed to join the multicast tree so that it can transmit the multicast data to the communication unit ([0035]). Further, the base stations are configured to communicate with communication units which may be arranged into talk groups using multiple RF channel pairs ([0014]). Thus, Korus discloses bidirectional transmissions between users. This is in direct contrast with claim 1 where the connection from multicast controllers to a plurality of recipients is unidirectional.

Thompson, Korus, and Ginzboorg fail to disclose or suggest transmitting queries, along the new multicast group, that include a command configured to connect to another multicast tree, such as the distribution tree of the program A. Accordingly, Thompson Thompson, Korus, and Ginzboorg do not disclose or suggest generating at least one

second multicast tree and transmitting control messages, along the at least one second multicast tree, that include a command configured to connect to at least one first multicast tree. Therefore, the combination of Thompson, Korus, and Ginzboorg does not disclose or suggest "generating at least one second multicast tree … and transmitting the control messages … along the at least one second multicast tree … the control messages comprising … a command configured to connect to the at least one first multicast tree," as recited in independent claim 1 and similarly recited in independent claims 13 and 16.

For at least the reasons discussed above, Applicants respectfully submit that the combination of Thompson and Korus fails to disclose or suggest all of the elements of independent claims 1, 13, and 16. Accordingly, Applicants respectfully request that the rejection of claims 1, 13, and 16 be withdrawn.

Claims 4, 11, and 15 depend from, and further limit, independent claims 1 and 13. Thus, each of claims 4, 11, and 15 recite subject matter that is neither disclosed nor suggested in the combination Thompson and Korus. Accordingly, Applicants respectfully request that the rejections of claims 4, 11, and 15 be withdrawn.

Reconsideration and allowance of claims 1, 4, 11, 13, and 15-16 are respectfully submitted.

Claims 2 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in view of Korus and Ginzboorg and further in view of U.S. Patent Appln. Pub. No. 2002/0143951 of Khan et al. ("Khan"). The Office Action took the position that

the combination of Thompson, Korus, and Ginzboorg discloses all of the elements of the claims, with the exception of the features recited in claims 2 and 14. The Office Action then relies upon Khan as allegedly curing these deficiencies in the combination of Thompson, Korus, and Ginzboorg. Applicants respectfully traverse this rejection.

In order for this rejection to be sustainable, the combination of Thompson, Korus, Ginzboorg, and Khan must teach all the recitations of independent claims 1 and 13. Accordingly, the arguments presented above supporting the patentability of independent claims 1 and 13 over the combination of Thompson, Korus, and Ginzboorg are incorporated herein to support the patentability of dependent claims 2 and 14. Therefore, it is respectfully requested that dependent claims 2 and 14 be allowed. Khan fails to cure the deficiencies of the combination of Thompson and Korus.

Khan generally relates to a method and a system for sending multicast information to a user using agents, network programs, that reside on multicast-enabled computers. The agents receive multicast data packets sent to members of a multicast group. The agents repackage the multicast information into a unicast data packet and forward the unicast data packet to a client registered with the agent (*see* Khan at Abstract).

However, Khan fails to cure the deficiencies of the combination of Thompson, Korus, and Ginzboorg. Similarly to the combination of Thompson, Korus, and Ginzboorg, Khan fails to disclose or suggest, at least, "multicast connection from a multicast controller to a recipient is unidirectional … generating at least one second multicast tree … and transmitting the control messages … along the at least one second

multicast tree … the control messages comprising … a command configured to connect to the at least one first multicast tree," as recited in independent claims 1 and 13. Khan is silent as to teaching the particular features associated with the command of independent claims 1 and 13.

Therefore, the combination of Thompson, Korus, Ginzboorg, and Khan would not lead a person of ordinary skill in the art to arrive at the features of the command as recited in independent claims 1 and 13. Consequently, Applicants submit that independent claims 1 and 13 and related dependent claims 2 and 14 are not obvious over the combination of Thompson, Korus, Ginzboorg, and Khan. Accordingly, Applicants respectfully request that the rejection of claims 2 and 14 be withdrawn.

Reconsideration and allowance of claims 2 and 14 are respectfully submitted.

Claims 3, 5, and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in view of Korus and Ginzboorg and further in view of U.S. Patent No. 6,243,758 of Okanoue ("Okanoue"). The Office Action took the position that the combination of Thompson, Korus, and Ginzboorg discloses all of the elements of the claims, with the exception of the features recited in claims 3, 5, and 9. The Office Action then relies upon Okanoue as allegedly curing these deficiencies in the combination of Thompson and Korus. Applicants respectfully traverse this rejection.

In order for this rejection to be sustainable, the combination of Thompson, Korus, Ginzboorg, and Okanoue must teach all the recitations of independent claim 1.

Accordingly, the arguments presented above supporting the patentability of independent claim 1 over the combination of Thompson, Korus, and Ginzboorg are incorporated herein to support the patentability of dependent claims 3, 5, and 9. Therefore, it is respectfully requested that dependent claims 3, 5, and 9 be allowed. Okanoue fails to cure the deficiencies of the combination of Thompson, Korus, and Ginzboorg.

Okanoue generally relates to a computer network formed by subnetworks in which a multicast scope is defined as a reachable extent of multicast packets. Each host in the scope transmits a multicast packet containing a scope field indicating that transmission of the multicast packet beyond the scope is forbidden. The packet also contains a boundary flag indicating whether only those hosts within the scope are allowed to participate in a group activity or mobile hosts outside the scope are also allowed to participate in the group activity (*see* Okanoue at Abstract).

However, Okanoue fails to cure the deficiencies of the combination of Thompson, Korus, and Ginzboorg. Similarly to the combination of Thompson, Korus, and Ginzboorg, Okanoue fails to disclose or suggest, at least, "multicast connection from a multicast controller to a recipient is unidirectional ... generating at least one second multicast tree ... and transmitting the control messages ... along the at least one second multicast tree ... the control messages comprising ... a command configured to connect to the at least one first multicast tree," as recited in independent claim 1. Okanoue is silent as to teaching the particular features associated with the command of independent claim 1.

Therefore, the combination of Thompson, Korus, Ginzboorg, and Okanoue would not lead a person of ordinary skill in the art to arrive at the features of the command as recited in independent claim 1. Consequently, Applicants submit that independent claim 1 and related dependent claims 3, 5, and 9 are not obvious over the combination of Thompson, Korus, Ginzboorg, and Okanoue. Accordingly, Applicants respectfully request that the rejection of claims 3, 5, and 9 be withdrawn.

Reconsideration and allowance of claims 3, 5, and 9 are respectfully submitted.

Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in view of Korus and further in view of U.S. Patent No. 6,269,080 of Kumar et al. ("Kumar"). The Office Action took the position that the combination of Thompson, Korus, and Ginzboorg discloses all of the elements of the claims, with the exception of the features recited in claim 6. The Office Action then relies upon Kumar as allegedly curing these deficiencies in the combination of Thompson, Korus, and Ginzboorg. Applicants respectfully traverse this rejection.

In order for this rejection to be sustainable, the combination of Thompson, Korus, Ginzboorg, and Kumar must teach all the recitations of independent claim 1. Accordingly, the arguments presented above supporting the patentability of independent claim 1 over the combination of Thompson, Korus, and Ginzboorg are incorporated herein to support the patentability of dependent claim 6. Therefore, it is respectfully

requested that dependent claim 6 be allowed. Kumar fails to cure the deficiencies of the combination of Thompson, Korus, and Ginzboorg.

Kumar generally relates to a method for multicast file distribution and synchronization in data networks. Specifically, the present invention includes a mechanism for efficient and reliable distribution of a data file from a single source to a large number of receivers using multicast distribution in wide area networks. The multicast file distribution is done by designating a receiver as an active receiver. The active receiver is selected using a novel token granting procedure. Once selected, the active receiver is responsible for generating retransmission requests as well as providing flow control feedback to the server during data transfer. All receivers on the network are offered a chance to become an active receiver in a controlled manner, and only one receiver can be an active receiver at any given time. This process continues until there are no receivers in the group with missing data segments. The second part of the protocol provides synchronization of the file version to ensure that all receivers have the last distributed version of the data file. In addition, the protocol allows newly joined receivers to request the file from the server. The protocol is suitable for applications where a server periodically distributes a new version of the data file to receivers in the network. In addition, the protocol can be deployed with or without the support of Internet Protocol (IP) multicast technology, and is not tied to any particular network topology or transmission medium.

However, Kumar fails to cure the deficiencies of the combination of Thompson, Korus, and Ginzboorg. Similarly to the combination of Thompson, Korus, and Ginzboorg, Kumar fails to disclose or suggest, at least, "multicast connection from a multicast controller to a recipient is unidirectional … generating at least one second multicast tree … and transmitting the control messages … along the at least one second multicast tree … the control messages comprising … a command configured to connect to the at least one first multicast tree," as recited in independent claim 1. Kumar is silent as to teaching the particular features associated with the command of independent claim 1.

Therefore, the combination of Thompson, Korus, Ginzboorg, and Kumar would not lead a person of ordinary skill in the art to arrive at the features of the command as recited in independent claim 1. Consequently, Applicants submit that independent claim 1 and related dependent claim 6 are not obvious over the combination of Thompson, Korus, Ginzboorg, and Kumar. Accordingly, Applicants respectfully request that the rejection of claim 6 be withdrawn.

Reconsideration and allowance of claim 6 is respectfully submitted.

Claims 7 and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in view of Korus and further in view of U.S. Patent No. 7,055,027 of Gunter et al. ("Gunter"). The Office Action took the position that the combination of Thompson, Korus, and Ginzboorg discloses all of the elements of the claims, with the exception of

the features recited in claims 7 and 8. The Office Action then relies upon Gunter as allegedly curing these deficiencies in the combination of Thompson, Korus, and Ginzboorg. Applicants respectfully traverse this rejection.

In order for this rejection to be sustainable, the combination of Thompson, Korus, Ginzboorg, and Gunter must teach all the recitations of independent claim 1. Accordingly, the arguments presented above supporting the patentability of independent claim 1 over the combination of Thompson, Korus, and Ginzboorg are incorporated herein to support the patentability of dependent claims 7 and 8. Therefore, it is respectfully requested that dependent claims 7 and 8 be allowed. Gunter fails to cure the deficiencies of the combination of Thompson, Korus, and Ginzboorg.

Gunter generally relates to a network architecture allowing an intermediary to inspect an encrypted data stream on a virtual private network (VPN) in a secure and trusted manner. The endpoints establish a virtual private network by negotiating a session key used to encrypt data being exchanged between them. The endpoints know the session key, but not the intermediary. To grant the intermediary trusted access to the data stream on the VPN, one endpoint securely transfers the session key to the firewall by encrypting the session key using the intermediary's public key and then signing the encrypted session key. The intermediary authenticates the signature and decrypts the session key using its own private key. If the process yields a valid key, the intermediary is assured that the session key was sent by the endpoint and was not subsequently tampered with in route.

Once the session key is transferred, the firewall can decrypt and inspect the data stream on the VPN in a manner that is transparent to the endpoints.

However, Gunter fails to cure the deficiencies of the combination of Thompson, Korus, and Ginzboorg. Similarly to the combination of Thompson, Korus, and Ginzboorg, Gunter fails to disclose or suggest, at least, "multicast connection from a multicast controller to a recipient is unidirectional ... generating at least one second multicast tree ... and transmitting the control messages ... along the at least one second multicast tree ... the control messages comprising ... a command configured to connect to the at least one first multicast tree," as recited in independent claim 1. Gunter is silent as to teaching the particular features associated with the command of independent claim 1.

Therefore, the combination of Thompson, Korus, Ginzboorg, and Gunter would not lead a person of ordinary skill in the art to arrive at the features of the command as recited in independent claim 1. Consequently, Applicants submit that independent claim 1 and related dependent claims 7 and 8 are not obvious over the combination of Thompson, Korus, Ginzboorg, and Gunter. Accordingly, Applicants respectfully request that the rejection of claims 7 and 8 be withdrawn.

Reconsideration and allowance of claims 7 and 8 is respectfully submitted.

Claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in view of Korus and further in view of U.S. Patent Pub. No. 2003/0061333 of

Dean et al. ("Dean"). The Office Action took the position that the combination of Thompson, Korus, and Dean discloses all of the elements of the claims, with the exception of the features recited in claim 12. The Office Action then relies upon Dean as allegedly curing these deficiencies in the combination of Thompson, Korus, and Ginzboorg. Applicants respectfully traverse this rejection.

Based on its actual filing date, Dean (filed May 3, 2002) is not prior art with respect to the present application since it was filed after September 7, 2001, which is the priority date for the present application. Applicants note that Dean's effective (not actual) filing date would appear to be May 4, 2001, based on its relationship to U.S. Provisional Patent Appln. No. 60/289,023 (the '023 application). The '023 application was not published, as provisional applications are not published by the USPTO. Accordingly, it is respectfully requested that the rejection of claim 12 be withdrawn as based on a reference that is not prior art under 35 U.S.C. 102(e) or any other statutory section. If the rejection is maintained based on the disclosure of the '023 application, it is respectfully submitted that a *prima facie* rejection must substantiate the rejection with reference to the disclosure of the '023 application, by page and line number of that document.

Reconsideration and allowance of claim 12 are respectfully submitted.

CONCLUSION

For the reasons explained above, it is respectfully submitted that each of claims 1-16 recite subject matter that is neither disclosed nor suggested in the cited art. It is, therefore, respectfully requested that all of claims 1-16 be allowed, and that this application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

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